

Claims

1. A stent for insertion in a fluid conduit of the human or animal body when the stent is in a collapsed 5 condition and for expansion to an expanded condition, the stent comprising an outer wall for engagement with the conduit, the outer wall having a helical portion which in the expanded condition extends longitudinally and circumferentially, and which, upon expansion of the 10 stent from the collapsed condition to the expanded condition, resists extension.

2. A stent as claimed in claim 1, wherein the centre line of the stent in the expanded condition follows a 15 substantially helical path.

3. A stent as claimed in claim 1 or 2, wherein the helical portion comprises an increased amount of stent forming material relative to the amount of stent forming 20 material in portions of the stent adjacent to the helical portion.

4. A stent as claimed in claim 1, 2 or 3, wherein the helical portion comprises structural members having bent 25 portions which resist unbending during expansion of the stent.

5. A stent as claimed in any of claims 1 to 4, being a self-expanding stent.

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6. A stent as claimed in any of claims 1 to 4, being a balloon expandable stent.

7. A stent as claimed in any preceding claim, which in 35 the expanded condition causes the fluid conduit to follow a non-planar curve as it extends in the longitudinal direction, said curve undergoing at least

one turn.

8. A stent as claimed in any preceding claim, wherein  
the stent expands from the collapsed condition to the  
5 expanded condition without substantial twisting.

9. A balloon expandable stent for insertion in a fluid  
conduit of the human or animal body when the stent is in  
a collapsed condition and for expansion to an expanded  
10 condition, the stent comprising a balloon having an  
expandable wall, the wall having a helical portion which  
in the expanded condition extends longitudinally and  
circumferentially, and which, upon expansion of the  
balloon from the collapsed condition to the expanded  
15 condition, resists extension.

10. A stent as claimed in claim 9, wherein the helical  
portion of the balloon expandable wall has a wall  
thickness greater than that of adjacent wall portions.

20 11. A stent as claimed in claims 9 or 10, which in the  
expanded condition causes the fluid conduit to follow a  
non-planar curve as it extends in the longitudinal  
direction, said curve undergoing at least one turn.

25 12. A stent for insertion in a fluid conduit of the  
human or animal body when the stent is in a collapsed  
condition and for expansion to an expanded condition,  
wherein in the expanded condition the stent causes the  
30 fluid conduit to have a flow lumen having a centre line  
which follows a substantially helical path, the helical  
centre line having a helix angle less than or equal to  
65° and an amplitude less than or equal to one half of  
the internal diameter of the flow lumen.

35 13. A stent as claimed in claim 12, wherein the  
amplitude of the helical centre line divided by the

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internal diameter of the tubing is at least 0.05.

14. A stent as claimed in claim 12 or 13, wherein the stent, in the expanded condition, substantially free of 5 ribs which would project into the flow lumen of the conduit.

15. A stent as claimed in claims 12, 13 or 14, wherein the helix angle is less than or equal to 15°.

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16. A stent as claimed in any of claims 12 to 15, wherein the flow lumen of the stented conduit is of substantially circular cross-section.

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17. A stent as claimed in any of claims 12 to 16, wherein the helical centre line of the stented conduit extends over just part of the overall length of the stent.

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18. A stent as claimed in any of claims 12 to 16, wherein the helical centre line of the stented conduit extends over substantially the entire length of the stent.

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19. A stent as claimed in any of claims 12 to 18, wherein the centre line of the stent follows a substantially helical path about an axis which is curved.

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20. A stent as claimed in any preceding claim, comprising a pharmaceutical coating.